CONDUCTING A PHYSICS EXPERIMENT (STATIC ELECTRICITY) IN ALTERNATIVE LEARNING SYSTEM: EXPERIENCES OF GRADE 12 STEM STUDENTS OF PABLO ROMAN NATIONAL HIGH SCHOOL

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Alternative learning (modular & virtual) requires students to understand the material, mostly by themselves, since instructors are not always available. Unfortunately, through these methods, students are only able to express themselves in writing since classes are not usually held and there are barely any chances of participation in discussions. As a return, the materials given may not be accurately absorbed result in failed activities and required experimentations. Students not being properly guided and taught have a great impact on their learning aptitudes and knowledge absorption. For instance, Grade 12—STEM students at Pablo Roman National High School shared their experiences in their Science classes They were told to experiment with the concept “Static Electricity”. The initial plan was to divide the groups with 5 different given tasks through Microsoft Teams with the following experiments “fly a bag”, “roll a can”, “separate salt and pepper”, “water bending”, and “hovering plates” respectively with the use of static electricity. However, since students were prohibited to meet face-to-face, the tasks had to be done individually.

Regrettably, arising problems could not be avoided and they were only heightened during this pandemic. For example, the first group was given the task of making a plastic bag float using static electricity with the materials of a plastic rod and cloth. And the struggle they came to encounter was that the professor failed to give a clear illustration and did not specify which type of fabric was supposed to be used to easily transfer electrons into the plastic rod. Furthermore, the group also found it difficult to visualize the outcome of the experiment because it did not work which led to their group leader
stating that the experiment was a failure. Another group also experienced the same thing with their experiment of making plates hover. Not only were the instructions flawed and confusing, but they also encountered a lack of resources needed to make the experiment work. The group still tried to push through with the task given despite this obvious problem, however, as expected, it failed. According to one of the group members, since the directions provided are insufficient, they decided to browse YouTube for tutorials and found out that it would have been better if they happened to use “fur” because it would’ve been easier for the plate to release electrons if the cloth used for rubbing was fur and that was something that they did not have during the experiment, causing it to fail. Instead of being empty-handed out of a failed experiment, the group then decided to send a request to their teacher to change the experiment so they could have something to submit.

Evidently, conducting different scientific experiments during this pandemic by alternative learning systems (modular and virtual) is not easy because everyone lacks laboratory instruments to perform experimental activities. Moreover, proper guidance of the subject teacher is vital in conducting at-home experiments. Unlike before, when the instructor is just a call away and there are other classmates to be asked, doing experiments with what the education system considers new normal, is comparably hard in lots of different senses but assuming that the people in charge on this field cannot think of another clever idea that happens to be more efficient and effective, the students just have to deal with it and adjust.

Experiments are extremely important in science education, although study and a greater understanding of the impact of hands-on laboratories on students’ knowledge are still needed. Educators at all levels around the world were challenged to deliver classes online during the COVID-19 pandemic and public blackout. Science teachers were in a particularly difficult position since they needed to coordinate theoretical and practical
parts of instruction, which necessitated the transfer of experiments and laboratory operations to an online environment.

References:

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